

## EXECUTIVE SUMMARY

This work plan was assembled to provide a summary of our project understanding, and to assist in documenting the needs and requirements as expressed by the Lowell School Department to ensure a successful project.

## 1 CAWLEY MEMORIAL STADIUM COMPLEX

The modular space requirements at the Cawley Stadium complex will provide programmed space for the athletic department to replace the previous/demolished structure serving similar use including: fitness/weight room, and general office/meeting spaces

### 1.1 Existing Site

The existing site previously had a similar structure that has now been demolished and removed from the site. The new modular complex at this location will be located in the same portion of the site, located in the Southeast corner along Village Street where it bisects the stadium circulation road.

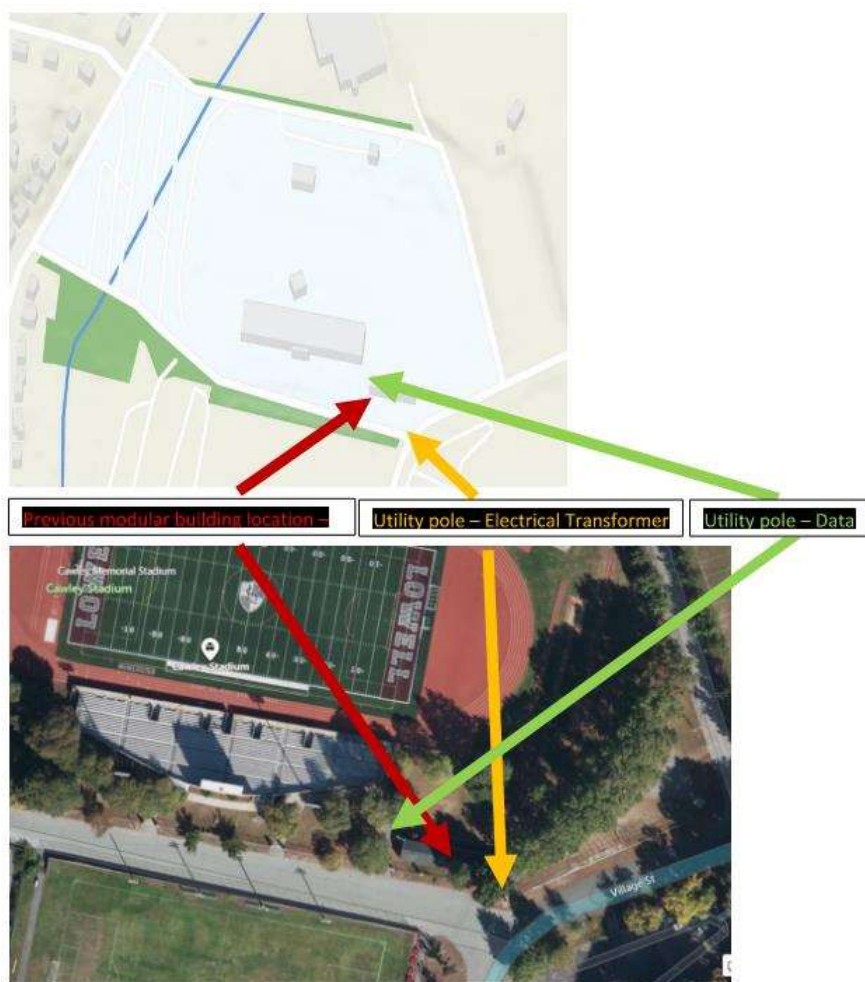


Figure 1. Existing Site: Overview

## PROJECT UNDERSTANDING AND WORKPLAN



**Figure 2. Existing Site: Looking West**



**Figure 3. Existing Utility Pole**

## 1.2 Approximate Program Area(s) & Requirements

Budget: 1.4m	Overall Building	Weight Room	Office/Meeting Areas
Size/Dimensions	36' x 120'	36' X 60'	36' X 60'
Details & Requirements		<ul style="list-style-type: none"> <li>○ Heaviest point load of the equipment is approx. 1,000 lbs</li> <li>○ Weight of floor being installed is 4.3 to 4.6 lbs per sq. ft.</li> <li>○ Required ceiling height for gym equipment = 7'-9"</li> <li>○ 4 windows (2) Sides</li> <li>○ (1) Dlb door ext</li> <li>○ (1) 36" single int door</li> <li>○ Drywall Walls</li> </ul>	<ul style="list-style-type: none"> <li>○ Three 12' X 12' offices: <ul style="list-style-type: none"> <li>▪ Per code duplex outlets, switched ceiling mounted light fixture</li> <li>▪ 1 data / telephone port</li> <li>▪ 1 ea. Windows</li> <li>▪ 1 ea. locking solid door</li> <li>▪ VCT flooring</li> <li>▪ Any furniture/equip = by School Dept.</li> <li>▪ Technology = by School Dept.</li> </ul> </li> <li>○ One 36' x 48' meeting room: <ul style="list-style-type: none"> <li>▪ Per code duplex outlets &amp; switched ceiling mounted light fixtures</li> <li>▪ 3 data/telephone ports</li> <li>▪ 4 windows minimum</li> <li>▪ 3 locking solid doors, 1 exterior, 2 interior</li> <li>▪ VCT flooring</li> <li>▪ Any furniture/equip = by School Dept.</li> <li>▪ Technology = by School Dept.</li> </ul> </li> </ul>
Pre-purchased Equipment		<ul style="list-style-type: none"> <li>○ Sports floor (see specs)</li> <li>○ Gym Equipment (see layout, list and specs)</li> </ul>	<ul style="list-style-type: none"> <li>○ Funded separately</li> </ul>
Other Notes	Aries quote: \$600k	See equipment layout below	



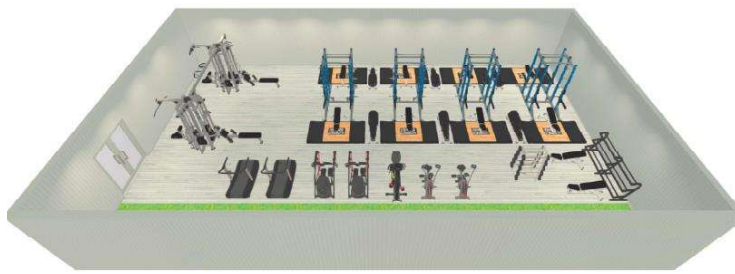
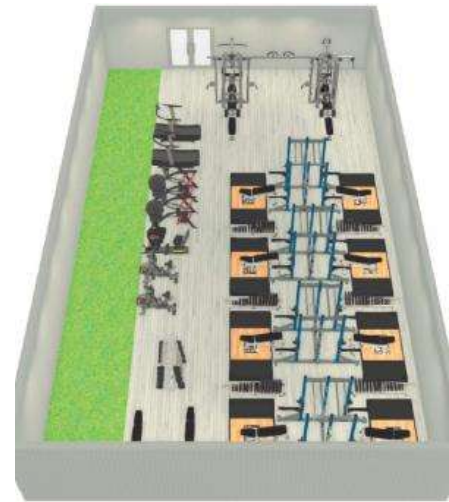


Figure 4. Equipment Layouts by Gronk Fitness



### 1.2.1 Utilities Required

- Power, smoke and heat detectors – need to know how much power is required.
- Communications/internet = by the School Dept.
- NO WATER OR SEWER Connections
- ASSUME NO FIRE PROTECTION or SPRINKLERS

### 1.2.2 Design & Subcontractor Disciplines Required

- Architect/code consultant
- HVAC Engineer for AC load requirements
- Structural Engineer for foundation design requirements/by Modular Company?
- Electrical Engineer for service design/NGrid application by Modular Company
- Geotech Engineer for soil and foundation design
- Boring/test pit Subcontractor
- NGrid for electrical service
- Waive permits by city

## 1.3 Procurement Approach

The Lowell School Facilities Department (Owner) and Owners Project Manager (OPM) will gather as much pertinent information from the Lowell School and City Departments about the previous Modular units on the site as well as any other relevant information that can assist the Designers in providing a comprehensive proposal. The City of Lowell will need a Designer to put a Modular Building bid package together that will address the structural load, layout functions, electrical layout and power loads for the National Grid application, geotechnical engineer for soils evaluation and foundation design parameters. To get the designers scope as clear and complete as possible, all City of Lowell departments having jurisdiction over any aspect of the project must provide any of their requirements, regulations, or restrictions that this project will be approved by, in advance of the Designers RFS being issued. The OPM will reach out to the applicable departments to solicit any of this information to include it in the Designer's RFS.

The OPM and Owner will work together to assemble the necessary information to develop a Designer's Request for Services (RFS). Then the OPM will draft the (RFS) to be approved by the Owner and issued by Lowell Procurement to get the design team on board.

The design team will then assist the City of Lowell (Owner) and Dore & Whittier Management Partners (OPM), define the unknowns, and clarify the scope in bid documents – preliminary plans and specifications – for the project. The Designers Proposal compliance with the information in the bid documents will be one of the evaluation comparison criteria that bidders will be selected by, and will be stated as such, in the Request for Bids document.

The Owner will have the option to ask the Designer and/or the OPM to provide estimates at this point as scope is now identified, and prior to the bid package being put out to bid publicly. This will add time (approximately 3 weeks) to the process but will enable the team to understand if there are components that would need to change if the project cost is estimated to exceed the budget number. Alternatively, if no estimate is produced, and the project is bid publicly, and the bids exceed the budget, the project would need to be redesigned and re-bid adding approximately 2 to 3 months to the schedule. If re-design is required in either scenario to reduce the scope of the project, this would carry additional re-design and project management costs negatively impacting the budget further.

## 2 STEM ACADEMY

The new modular space requested at the STEM Academy school will provide additional programmed space for the existing K-8 population/STEM academy school where the city strives to provide a safe learning community based around a Science, Technology, Engineering, and Math focused curriculum. It is estimated that the modular units will provide approximately 8-12 classrooms depending on the school department's programmatic requests and budget requirements.

### 2.1 Existing Site

Located at 43 Highland Street, the. The existing site contains a paved asphalt play area on the Eastern portion of the site adjacent to South Street. The school department has identified this area as the desired location for this project due to availability, ease of access, and flat expansive area adjacent to the existing school.

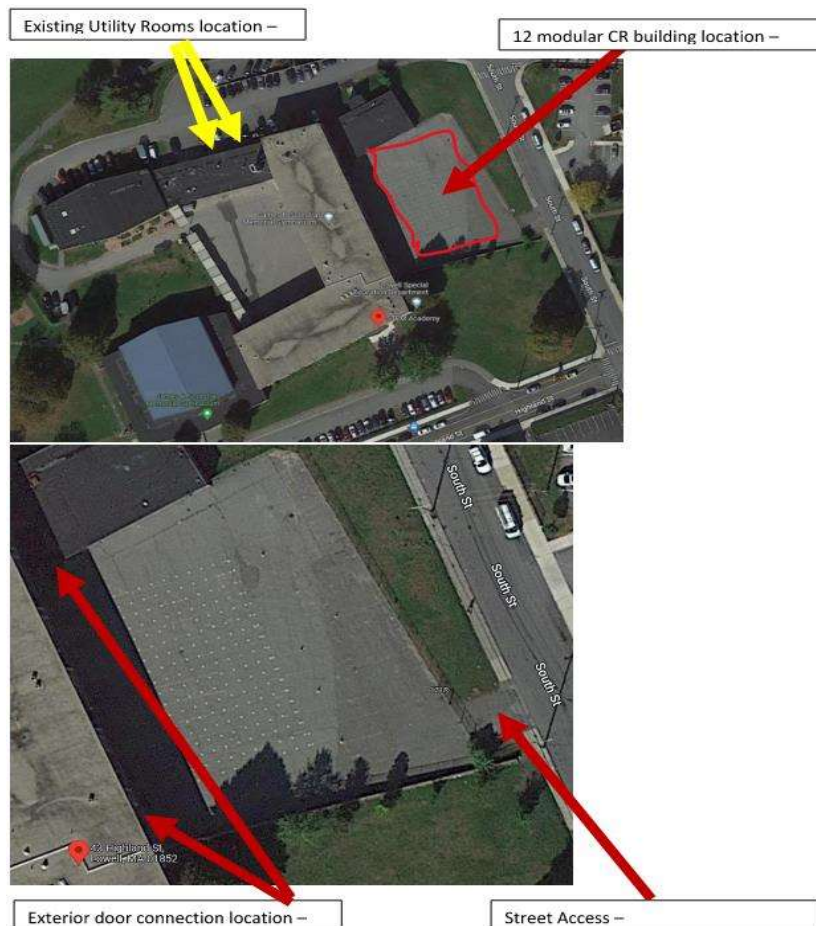


Figure 5. Existing STEM Academy Site

## PROJECT UNDERSTANDING AND WORKPLAN

In addition to the preferred site as provided by the school department, we have indicated a couple other site options that may deserve a study, considering the location and difficulty of access of existing utility connections.



Figure 6. Potential Alternative Locations

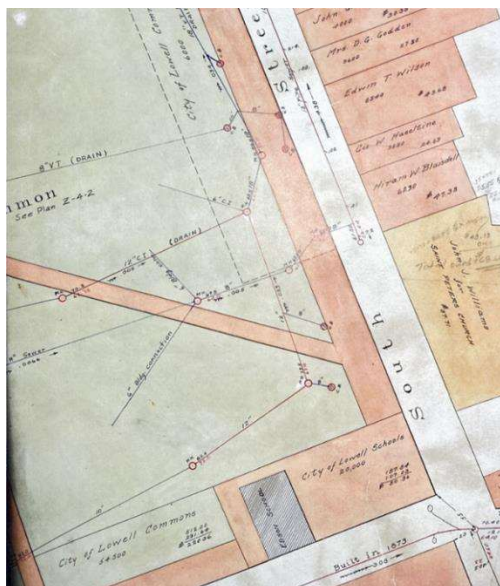


Figure 7. Existing Drainage (c/o Lowell Engineering)



## PROJECT UNDERSTANDING AND WORKPLAN

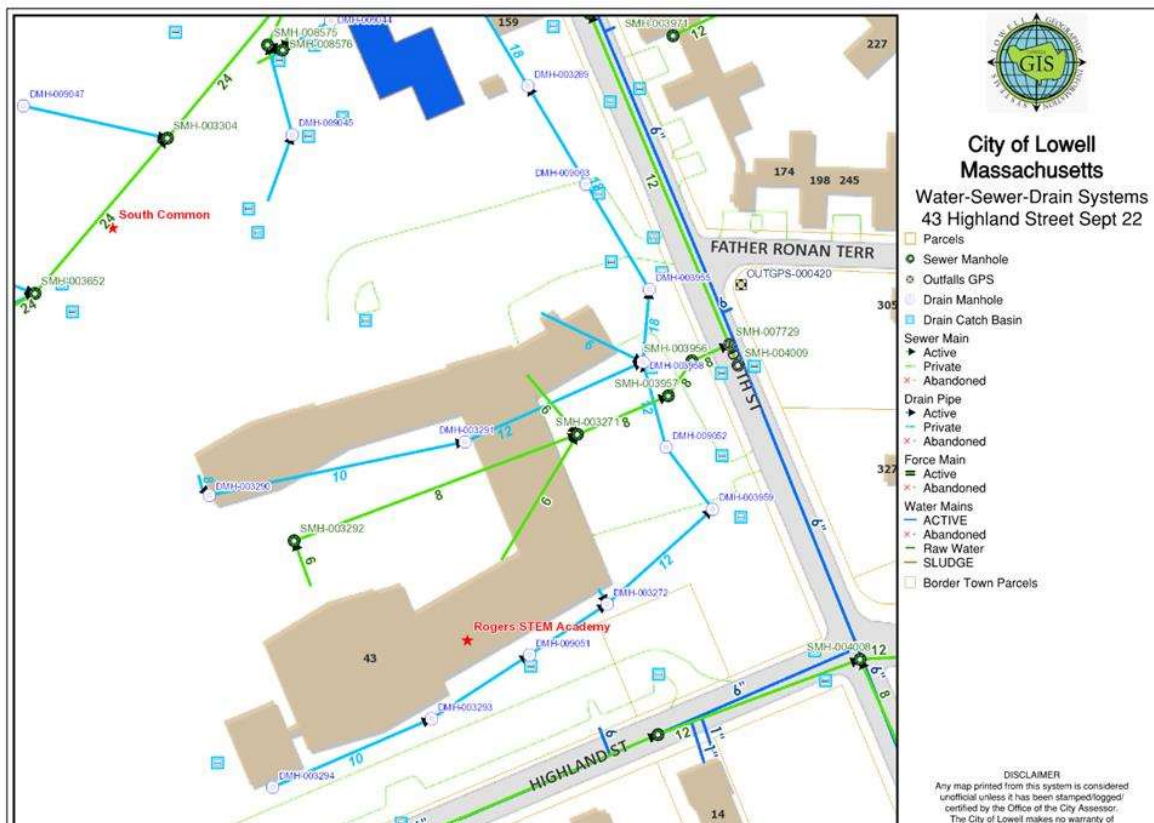


Figure 7. Water & Sewer & Drainage(c/o Lowell Engineering)

## 2.2 Approximate Program Area(s) & Requirements

	Overall Building	Classrooms	Bathrooms	Custodian Closet (Y/N?)
Size/ Dimensions	64' x 180' Approx 11,520 sf	Preferred size: 28' x 28' Approx 784 sf		
Details & Requirements		<ul style="list-style-type: none"> <li>Space is planned for general classroom use for students above grade level 2, <b>*note:</b> spaces are too small for K-1 students and don't have dedicated toilets; and are too small and don't have</li> </ul>	<ul style="list-style-type: none"> <li>2 gang toilet rooms, with or without entry doors?</li> <li>Number of fixtures required in each = Per</li> </ul>	<ul style="list-style-type: none"> <li>GFI duplex outlet</li> <li>floor sink</li> <li>shelving</li> <li>locking solid door</li> </ul>

## PROJECT UNDERSTANDING AND WORKPLAN

		<p>required utilities for lab use</p> <ul style="list-style-type: none"> <li>○ Furniture layout = by School Dept.</li> <li>○ Furniture purchased = by School Dept.</li> <li>○ Technology planned for the space = by School Dept.</li> <li>○ White boards, smart boards, other? = by School Dept.</li> <li>○ Requirements to run technology = by School Dept.</li> <li>○ Required ceiling height = 7'-9"</li> </ul>	<p>Plumbing Inspector</p> <ul style="list-style-type: none"> <li>▪ sinks</li> <li>▪ toilets</li> <li>▪ urinals</li> <li>▪ air hand dryer</li> <li>▪ 1 ea. Handicap toilet and sink</li> </ul>	
<b>Pre-purchased FF&amp;E</b>	<ul style="list-style-type: none"> <li>○ Furniture = by School Dept.</li> <li>○ Technology &amp; equipment = by School Dept.</li> </ul>			
<b>Other Notes</b>	<ul style="list-style-type: none"> <li>○ Connection corridors – 1 or 2? <ul style="list-style-type: none"> <li>▪ Will exterior connection corridors be conditioned space – Heat and ventilation? Y/N</li> </ul> </li> <li>○ Should Modulares be connected to Emergency power?</li> </ul>			

## 2.2.1 Potential Layout: Grades K-2 w/ attached toilets

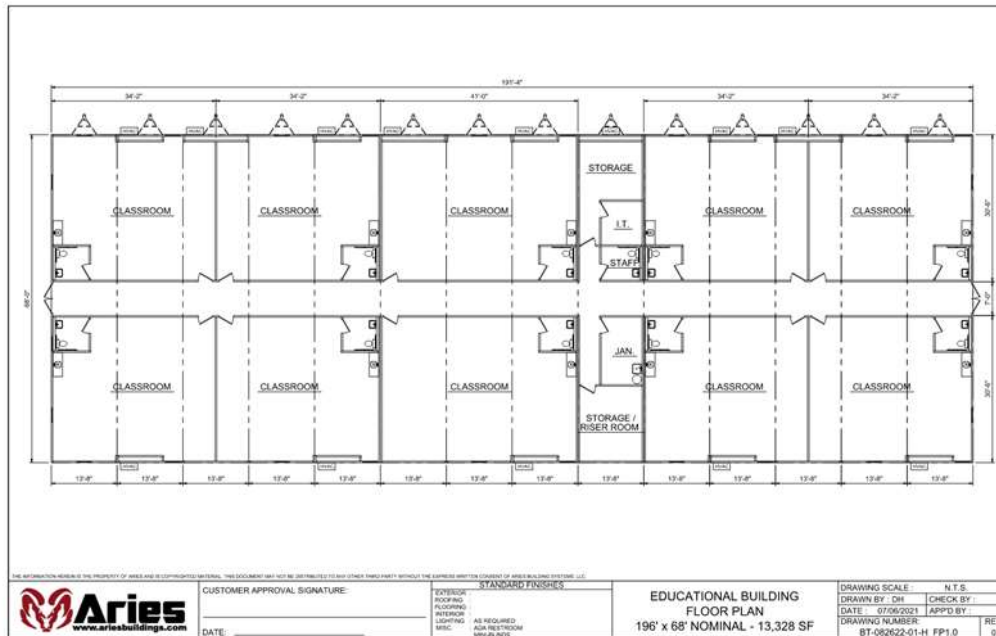


Figure 8. Sample K-2 classroom layout

## 2.2.2 Potential Layout: Grades 3-8 w/ separate gang toilets

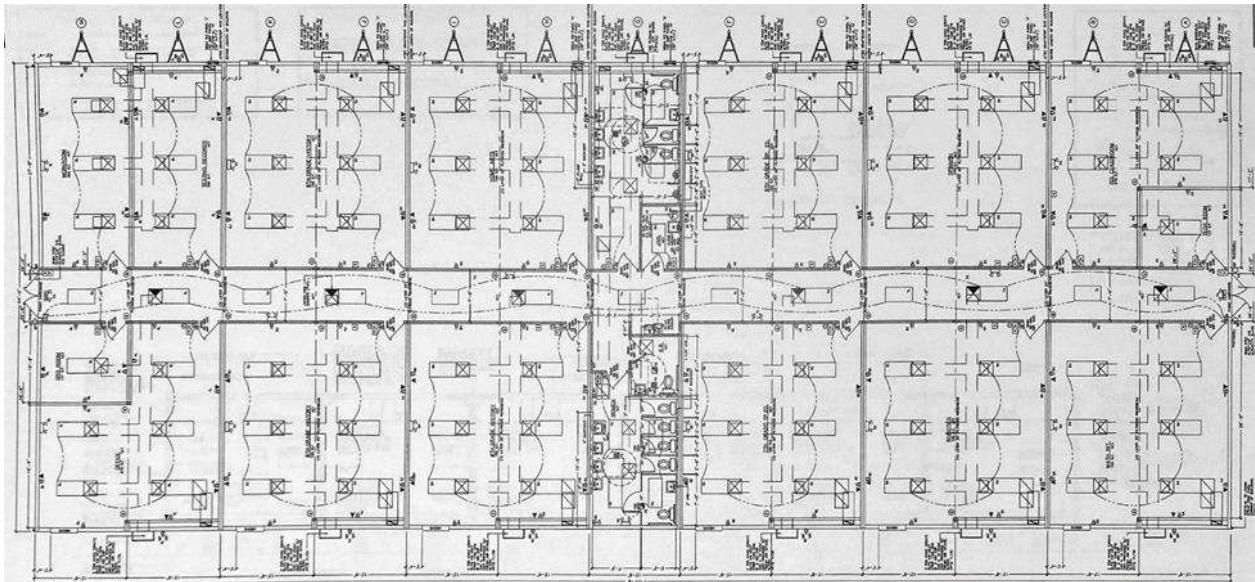
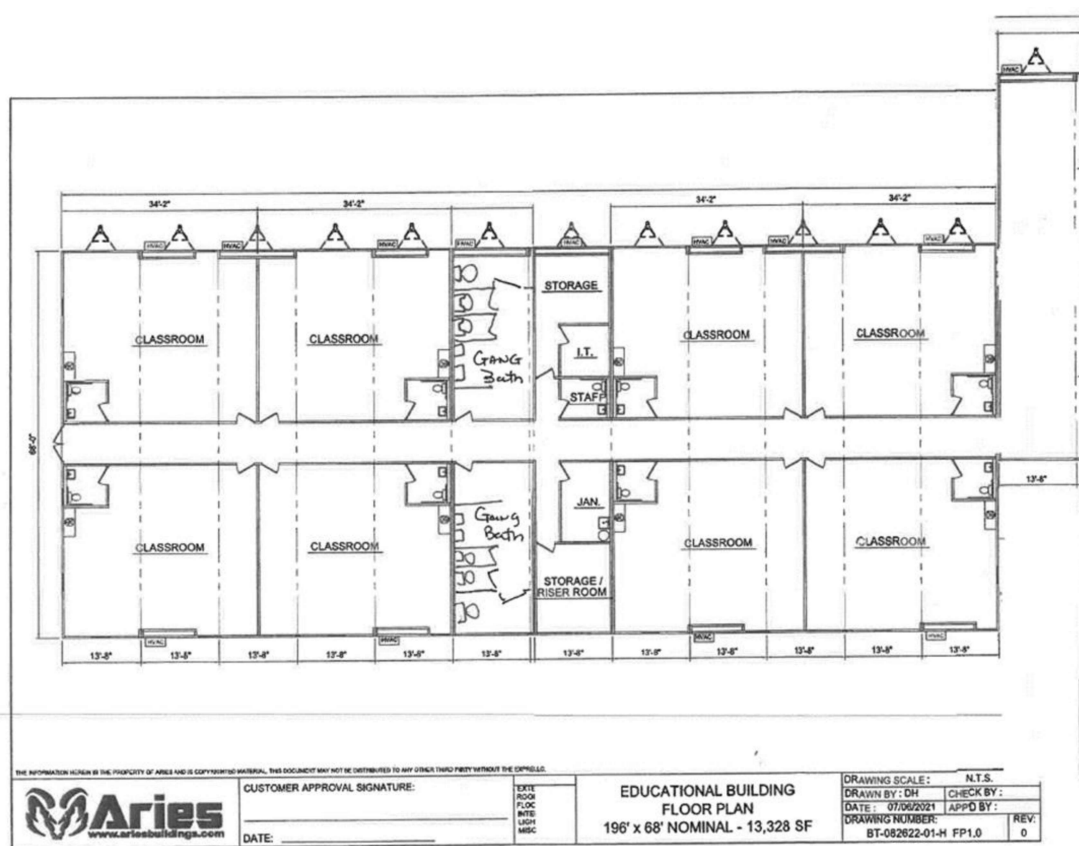


Figure 9. Sample 3-8 classroom layout

## 2.2.3 Potential Layout: 8 classrooms w/ separate gang toilets



## 2.2.4 Utilities Required

- Power and fire alarm strobes/horn
  - need to know how much power?
  - need to connect to either the building, site tap, or street
- Tie the modulares into the main building fire panel? Or have an independent panel?
- Communications/internet/? = by the School Dept.
- Water and Sewer Connections
  - need to connect to either the building, site tap, or street
- Modular units will be fully sprinkled space
  - Need to connect to either the building, site tap, or street



### 2.2.5 Building Security

- Will the units, doors, windows be tied into STEM academy security system? = by the School Dept.
- Will the modulars have Security Cameras inside or out? = by the School Dept.

### 2.2.6 Design & Subcontractor Disciplines Required

- Architect
- Structural Engineer
- Electrical Engineer
- Plumbing Engineer
- Fire Protection Engineer
- Civil Engineer
- Geo/Environmental Engineer
- 3rd Party Testing Agent
- Geotech Engineer
- Code Consultant
- Boring/test pit Subcontractor

## 2.3 Procurement Approach

The Lowell School Facilities Department (Owner) and Owners Project Manager (OPM) will gather as much pertinent information from the Lowell School and City Departments about the existing building utilities in and on the site and utilities in South Street as well as any other relevant information that can assist the Designers in providing a competitive proposal. The City of Lowell will need a Designer to put a Modular Building bid package together that will address the code plans, structural loads and foundation designs, fire protection requirements and connections, fire alarm and fire department panel connections, sewer and water requirements and connections, layout and access corridor designs, egress routes and door functions, security design elements, electrical layout and power loads for connections and potential the NGrid application, geotechnical engineer for soils evaluation and foundation design parameters, and permitting requirements and approvals. To get the designers scope as clear and complete as possible, all City of Lowell departments having jurisdiction over any aspect of the project must provide any of their requirements, regulations, or restrictions that this project will be approved by, in advance of the Designers RFS being issued. The OPM will reach out to the applicable departments to solicit any of this information to include it in the Designer's RFS.

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## PROJECT UNDERSTANDING AND WORKPLAN

The design team will then assist the City of Lowell (Owner) and Dore & Whittier Management Partners (OPM), define the unknowns, and clarify the scope in bid documents – preliminary plans and specifications – for the project. The Designers Proposal compliance with the information in the bid documents will be one of the evaluation comparison criteria that bidders will be selected by, and will be stated as such, in the Request for Bids document.

The Owner will have the option to ask the Designer and/or the OPM to provide estimates at this point as scope is now identified, and prior to the bid package being put out to bid publicly. This will add time (approximately 6 weeks) to the process but will enable the team to understand if there are components that would need to change if the project cost is estimated to exceed the budget number. Alternatively, if no estimate is produced, and the project is bid publicly, and the bids exceed the budget, the project would need to be redesigned and re-bid adding approximately 3 to 4 months to the schedule. If re-design is required in either scenario to reduce the scope of the project, this would carry additional re-design and project management costs negatively impacting the budget further.

As this process described above will take approximately 6+ months to complete, the ordering of the Modular units won't occur until early spring of 2023. Depending on the Modular Building fabrication /manufacturing lead time that could be between 6 to 12 months, the Lowell School Department would not have a finished useable space until Spring of 2024. This could be accelerated if the procurement of the Modular Building were on its own track and the utilities that connect to them were on a separate track. This 2 track scenario presents a high risk that the project could go over budget after sequential financial commitments have been made. By committing to purchase the Modular Building prior to bidding the utility work to connect them is a very risky path, as the utility connection work could be very expensive depending on the design solution.

To illustrate this risk, a potential "Fictitious project cost" model is shown below:

	Date	Estimated Cost
Soft Costs – Designer and OPM Fees?	October 2022	\$600,000?
Modular Building Package	December 2022	\$3,500,000 to \$5,000,000+ GUESS RANGE
Corridor and Utility Bid Package	March 2023	\$750,000 to \$2,000,000+ GUESS RANGE
Contingency		\$400,000?
Low Range of Potential Project Cost		\$5,350,000
High Range of Potential Project Cost		\$8,000,000

Should the Owner procure the modular units, which would fit in the existing budget number, in advance of the Corridor and Utility work being bid, the Owner could be significantly over budget when the final scope is bid. The impact would have only one solution, which is to increase the project budget with local funds as it is assumed that the grant requires that the project get built and used.

If the Modular Building is bid independently and the Corridor/Utility work is bid independently to a General Contractor, there will be increased scope and cost for the Design team to go through 2 bidding processes. There will be a need for the Owner, OPM and designer to go through the filed trade bid process for the electrical, plumbing, and fire protection trade contractors.

### **3 POTENTIAL ARCHITECTS/RFS DISTRIBUTION**

Elton & Hampton Architects – Bruce Hampton / 617-639-0633 / [bruce@eltonhamptonarchitects.com](mailto:bruce@eltonhamptonarchitects.com)

DRA – Lee Rich / 617-964-1700 / [Irich@draws.com](mailto:Irich@draws.com)

Flansburg – Jorge Cruze / Kent Kavacs / 617-367-3970

Lincoln Architects – Greg McIntosh / 781-724-1667 (c)

### **4 POTENTIAL MODULAR BIDDERS**

Aries Buildings – Brian Turner / (603) 566 1552 / [bturner@ariesbuildings.com](mailto:bturner@ariesbuildings.com)

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260 Merrimac Street, Building 7

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